

### ABSTRACT

The combination of a Vivaldi notch and a meander line loaded antenna for ultra wide bandwidth is provided with dual polarity by providing orthogonally oriented Vivaldi notched structures coupled to each other at the edges thereof. Mode selection is provided by selectively switching between linear and circular polarization modes through selective input coupling techniques. Each side of the dual polarity Vivaldi notch/MLA plates includes a bifurcated plate with one end of the bifurcated plate having exponentially curved Vivaldi notch surfaces ahead of a cavity opened at the rear end to the bifurcation notch. The side plates for the top plate structure are themselves Vivaldi notch structures, with their side plates being the adjoining top or bottom plate. In each case, internally carried meander lines connect the adjacent plates together.